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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/882,018	06/18/2001	Claire-Sabine Randriamasy	Q64966	8810

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EXAMINER	
DANIEL JR, WILLIE J	

ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/882,018	RANDRIAMASY, CLAIRE-SABINE	
	Examiner	Art Unit	
	WILLIE J. DANIEL JR	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 April 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to applicant's amendment filed on 10 April 2008. **Claims 1** and **3-11** are now pending in the present application and **claim 2** is cancelled. This office action is made **Final**.

Specification

2. The objection applied to the specification is withdrawn, as the proposed specification correction is approved.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 3-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Vasudevan et al**. (hereinafter Vasudevan) (**US 6,539,221 B1**) in view of **Bodin et al**. (hereinafter Bodin) (**US 5,241,685**).

Regarding **claim 1**, Vasudevan discloses a method of constructing a representation (Figs. 1, 5, and 17) of the geographical distribution of traffic for a cellular radio network (see abstract; col. 1, line 64 - col. 2, line 5; col. 2, lines 14-42), the method comprising the steps of:

dividing each cell of said cellular network into a set of sectors which reads on the claimed "areas" using information on outgoing handovers boundaries of a respective cell obtained from incoming handover boundaries obtained from said cellular network (see col. 1, line 64 - col. 2, line 5; col. 5, lines 1-12; Figs. 5, 6, 7, 8, and 20), where the cell is divided into areas for handover of traffic;

determining a traffic threshold which reads on the claimed "value" for each of said areas (see col. 8, lines 14-19,44-64; col. 11, lines 4-11; col. 13, lines 9-19; Figs. 3, 22b, 22f, and 22h), where a threshold is calculated for each cell area; and

determining a representation of the geographical distribution of the traffic from said traffic values (see col. 3, lines 47-64; col. 8, line 44 - col. 9, line 17; Figs. 5, 8, 11, 13, and 17), where the cell is split according to traffic threshold; and

outputting the determined representation (Figs. 1 and 24), where the system has a traffic map which maps traffic of an area,

wherein the traffic value of an area depends on an outgoing handover probability from said are to a neighboring cell (see col. 8, lines 14-19,44-64; col. 11, lines 4-11; col. 13, lines 10-19; Fig. 22b). Vasudevan clearly discloses the features as indicated above as evidenced by the fact that one of ordinary skill in the art would clearly recognize. However, the examiner maintains that the feature(s) information on outgoing handovers boundaries of a respective cell obtained from incoming handover boundaries obtained from said cellular network was well known in the art, as taught by Bodin.

As further support in the same field of endeavor, Bodin discloses the feature(s) information on outgoing handovers boundaries of a respective cell obtained from incoming

handover boundaries obtained from said cellular network (see col. 4, lines 41-55), where the system have threshold parameters to manage handover between boundaries.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Vasudevan as further supported by Bodin to have the feature(s) information on outgoing handovers boundaries of a respective cell obtained from incoming handover boundaries obtained from said cellular network, in order to dynamically adjust thresholds to balance traffic, as taught by Bodin (see col. 2, lines 35-50).

Regarding **claim 3**, the combination of Vasudevan and Bodin discloses every limitation claimed, as applied above (see claim 1), in addition Vasudevan further discloses a method according to claim 1, wherein said handover probabilities are computed conjointly with said traffic values by a constraint optimization method (see col. 1, lines 41-49; col. 5, line 39 - col. 8 line 43; col. 13, lines 10-19; Figs. 18 and 22b), where the network optimization is performed within the constraints of the algorithms.

Regarding **claim 4**, Vasudevan discloses a method according to claim 1, wherein the dividing of each cell comprises:

acquiring incoming handover boundaries from best server maps provided by a management system (see col. 3, lines 6-64; col. 4, lines 32 - col. 5, line 35; Figs. 16, 17, and 23a-c), where the system determines the handover boundaries which are adjusted according to traffic demands, and

computing outgoing handover boundaries from said incoming handover boundaries of a neighboring cell (see col. 3, lines 6-64; col. 4, lines 32 - col. 5, line 35; Figs. 16, 17, and 23a-

c), where determining of the outgoing boundaries are generated from the incoming boundary would be inherent for handover as one of ordinary skill in the art would clearly recognize,

dividing each cell of said cellular network into a set of sectors which reads on the claimed "areas" using the outgoing handover boundaries (see col. 1, line 64 - col. 2, line 5; col. 5, lines 1-12; Figs. 5, 6, 7, 8, and 20), where the cell is divided into areas for handover of traffic between sectors of cell,

wherein said outgoing handover boundaries form the boundaries of said areas (see col. 3, lines 6-64; col. 4, lines 32 - col. 5, line 35; Figs. 16, 17, and 23a-c), where determining of the outgoing boundaries are generated from the incoming boundary for handover. Vasudevan clearly discloses the features as indicated above as evidenced by the fact that one of ordinary skill in the art would clearly recognize. However, the examiner maintains that the feature(s) computing outgoing handover boundaries from said incoming handover boundaries of a neighboring cell was well known in the art, as taught by Bodin.

As further support in the same field of endeavor, Bodin discloses the feature(s) computing outgoing handover boundaries from said incoming handover boundaries of a neighboring cell (see col. 4, lines 41-55; col. 7, line 37-39), where the system have threshold parameters to manage handover between boundaries.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Vasudevan as further supported by Bodin to have the feature(s) computing outgoing handover boundaries from said incoming handover boundaries of a neighboring cell, in order to dynamically adjust thresholds to balance traffic, as taught by Bodin (see col. 2, lines 35-50).

Regarding **claim 5**, the combination of Vasudevan and Bodin discloses every limitation claimed, as applied above (see claim 1), in addition Vasudevan further discloses a method according to claim 1, wherein the following constraint is satisfied for each cell: addition of all the traffic values (λ_k) of the areas comprised in a cell (i) is equal to the traffic value of the cell (i) (see col. 5, lines 1-12; col. 8, lines 13-19; col. 9, line 33 - col. 10, line 14; col. 13, lines 9-19; Fig. 22b-h), where the cell/sectors have a power limit and traffic threshold that the densification program use for the algorithm and Erlang and Poisson formulas to optimize the network.

Regarding **claim 6**, the combination of Vasudevan and Bodin discloses every limitation claimed, as applied above (see claim 1), in addition Vasudevan further discloses a method according to claim 1, wherein a distinction is made between two types of areas contained in a cell C_i:

areas near a cell C_i, for which probability that a call will be subject to an outgoing handover is relatively high (see col. 8, lines 8-33,44-64; col. 11, lines 4-11; col. 13, lines 10-19; Fig. 22b),

other areas near a cell C_i, for which probability that a call will be subject to an outgoing handover is relatively low (see col. 8, lines 8-33,44-64; col. 11, lines 4-11; col. 13, lines 10-19; Fig. 22b). The cells of the system are divided into areas (e.g., sectors) for handover of traffic between sectors of cell (see col. 1, line 64 - col. 2, line 5; col. 5, lines 1-12; Figs. 5, 6, 7, 8, and 20), where system considers the demand in each area and projected demand (see col. 3, lines 11-20; col. 7, lines 38-41; claim 1).

Regarding **claim 7**, Vasudevan discloses a computer planning device for constructing a representation (Figs. 1, 5, and 17) of the geographical distribution of traffic for a cellular radio network (see abstract; col. 1, line 64 - col. 2, line 5; col. 2, lines 14-42), the device comprising:

a dividing instruction for dividing each cell of said cellular network into a set of sectors which reads on the claimed "areas" using information on outgoing handovers boundaries of a respective cell obtained from incoming handover boundaries obtained from said cellular network (see col. 1, line 64 - col. 2, line 5; col. 5, lines 1-12; Figs. 5, 6, 7, 8, and 20), where the cell is divided into areas for handover of traffic;

a first determining instruction for determining a traffic threshold which reads on the claimed "value" for each of said areas (see col. 8, lines 14-19,44-64; col. 11, lines 4-11; col. 13, lines 9-19; Figs. 3, 22b, 22f, and 22h), where a threshold is calculated for each cell area; and

a second determining instruction for determining a representation of the geographical distribution of the traffic from said traffic values (see col. 3, lines 47-64; col. 8, line 44 - col. 9, line 17; Figs. 5, 8, 11, 13, and 17), where the cell is split according to traffic threshold; and

an outputting instruction for outputting the determined representation to a management unit (Figs. 1 and 24), where the system has a traffic map which maps traffic of an area,

wherein the traffic value of an area depends on an outgoing handover probability from said are to a neighboring cell (see col. 8, lines 14-19,44-64; col. 11, lines 4-11; col. 13, lines 10-19; Fig. 22b). Vasudevan clearly discloses the features as indicated above as evidenced by the fact that one of ordinary skill in the art would clearly recognize. However, the

examiner maintains that the feature(s) information on outgoing handovers boundaries of a respective cell obtained from incoming handover boundaries obtained from said cellular network was well known in the art, as taught by Bodin.

As further support in the same field of endeavor, Bodin discloses the feature(s) information on outgoing handovers boundaries of a respective cell obtained from incoming handover boundaries obtained from said cellular network (see col. 4, lines 41-55), where the system have threshold parameters to manage handover between boundaries.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Vasudevan as further supported by Bodin to have the feature(s) information on outgoing handovers boundaries of a respective cell obtained from incoming handover boundaries obtained from said cellular network, in order to dynamically adjust thresholds to balance traffic, as taught by Bodin (see col. 2, lines 35-50).

Regarding **claim 8**, the combination of Vasudevan and Bodin discloses every limitation claimed, as applied above (see claim 1), in addition Vasudevan further discloses the method according to claim 1, wherein said outputting comprises outputting the determined representation to a management unit to generate an alarm or to take corrective measures when needed (see col. 9, lines 18-20), where the system recognizing the traffic conditions for an area to provide cell splitting in which the alarm would be inherent as one of ordinary skill in the art would clearly recognize.

Regarding **claim 9**, the combination of Vasudevan and Bodin discloses every limitation claimed, as applied above (see claim 7), in addition Vasudevan further discloses

the computer planning device according to claim 7, wherein said outputting instruction outputs the determined representation to a management unit to generate an alarm or to take corrective measures when needed (see col. 9, lines 18-20), where the system recognizing the traffic conditions for an area to provide cell splitting in which the alarm would be inherent as one of ordinary skill in the art would clearly recognize.

Regarding **claim 10**, Vasudevan discloses a mobile telecommunications network split into a plurality of cells (see col. 1, line 64 - col. 2, line 5; col. 2, lines 14-42; col. 9, lines 18-20), the network comprising:

a plurality of base stations, wherein each of the base stations are allocated to a respective cell within the plurality of cells (see col. 7, lines 38-40; Figs. 23a-c);

a management unit for managing the network (see Fig. 1);

a planning tool for constructing a representation of the geographical distribution of traffic for a cellular radio network (see Fig. 1),

wherein the planning tool divides each cell of said cellular network into a set of areas using information on outgoing handovers boundaries of a respective cell obtained from incoming handover boundaries obtained from said cellular network, determines a traffic value for each of said areas, and determines a representation of the geographical distribution of the traffic from said traffic values (see col. 1, line 64 - col. 2, line 5; col. 5, lines 1-12; col. 8, lines 14-19,44-64; col. 11, lines 4-11; col. 13, lines 9-19; Figs. 5, 6, 7, 8, and 20; claim 1); and

a storage unit storing the determined representation for determining whether corrective measures are needed with respect to allocation of the plurality of base stations to respective

cells, wherein the traffic value of an area depends on an outgoing handover probability from said area to a neighboring cell (see col. 8, lines 14-19,44-64; col. 11, lines 4-11; col. 13, lines 10-19; Fig. 22b). Vasudevan clearly discloses the features as indicated above as evidenced by the fact that one of ordinary skill in the art would clearly recognize. However, the examiner maintains that the feature(s) information on outgoing handovers boundaries of a respective cell obtained from incoming handover boundaries obtained from said cellular network was well known in the art, as taught by Bodin.

As further support in the same field of endeavor, Bodin discloses the feature(s) information on outgoing handovers boundaries of a respective cell obtained from incoming handover boundaries obtained from said cellular network (see col. 4, lines 41-55), where the system have threshold parameters to manage handover between boundaries.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Vasudevan as further supported by Bodin to have the feature(s) information on outgoing handovers boundaries of a respective cell obtained from incoming handover boundaries obtained from said cellular network, in order to dynamically adjust thresholds to balance traffic, as taught by Bodin (see col. 2, lines 35-50).

Regarding **claim 11**, the combination of Vasudevan and Bodin discloses every limitation claimed, as applied above (see claim 1), in addition Vasudevan further discloses the method according to claim 1, wherein the areas are data driven and are geometrically heterogeneous (see Figs.23a-c).

Response to Arguments

4. Applicant's arguments with respect to claims 1 and 3-11 have been considered but are moot in view of the new ground(s) of rejection necessitated by the amended language, new limitations, and/or new claims.

In response to applicant's arguments, the Examiner respectfully disagrees as the applied reference(s) provide more than adequate support and to further clarify (see the above claims for relevant citations).

5. The Examiner requests applicant to provide support for any further amended claim language.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIE J. DANIEL JR whose telephone number is (571)272-7907. The examiner can normally be reached on 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Appiah can be reached on (571) 272-7904. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/WJD,Jr/

WJD,Jr
18 July 2008

/Charles N. Appiah/
Supervisory Patent Examiner, Art Unit 2617